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ZEBRA GX420d™, GX420t™, and GX430t™ PRINTER SPECIFICATIONS

Specifications are provided for reference and are based on printer tests using Zebra brand ribbons and labels. Results may vary in actual application settings or when using other than recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing

Standard Features

- Maximum speed 6 ips (152 mm/s)
- 4 ips (102 mm/s) maximum print speed - GX430t
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- 300 dpi print resolution (12 dots/mm) - GX430t
- Direct thermal (d) and Thermal transfer (t) printing of bar codes, text, and graphics
- Fully enclosed 5.0" (127 mm) media compartment
- Dual-wall frame
- ZPL II® programming language
- EPL2® page mode programming language
- EPL Line Mode support - GX420d
- 32 bit RISC processor
- 8MB Std SDRAM memory (3 MB available to user)
- 4MB Std Flash memory (1.5 MB available to user)
- Zebra E^3 Printhead Energy Control
- Triple communications interface: Serial, USB & Parallel
- User interface feed button (ZPL style)
- Odometer for printer length tracking
- Unicode™ compliant for multi-language printing
- Auto calibration of media
- 16 resident expandable ZPL II bitmap fonts
- One resident scalable ZPL font
- 5 resident expandable EPL2 fonts
- Auto-switching 100-240V power supply
- Transmissive and reflective media sensing
- Head-up sensor
- Standard Tear-off mode feature
- Programmable print speeds of 2,3,4,5, & 6 ips (51,76,102,127, & 152 mm/s)
- Zebra printer driver for Windows

Optional Features

- **8 MB Flash Memory w/real time clock**– Total of 12 MB (9.5 MB available to user) for applications requiring additional levels of memory, time, and date information
- **Adjustable media sensor** – full width reflective black line sensor and multi-position gap sensor
- **Ethernet - ZebraNet 10/100 Print Server –** Internal Ethernet, offered in combination with USB & Serial interface (replaces Parallel port)
- **Wireless-** 802.11 b/g with LCD display (replaces Parallel port)
- **Wireless-** Bluetooth™ with LCD display (replaces Parallel port)
- **Dispenser (peeler) –** Label dispenser with label present sensor
- **Cutter –**
  - Continuous paper, linered Label & Tag Stock
  - Maximum Thickness 0.0069” (0.175 mm)
- **Font Packs** – Asian and other international font kits
- **Power cord** – US, Europe, UK, Australia, Argentina, Japan, and China
- **ZBI 2.0 –** Factory or field installed

Accessories

- **KDU Plus – f**ull size keyboard with LCD for stand alone printing applications
- **KDU –** keyboard Display Unit for stand-alone printing applications where space is limited

ZebraLink Solutions

Software

ZebraDesigner Pro – An intuitive, easy-to-use software program for creating complex label designs (option)
ZebraDesigner – Offers basic features for simple label design (standard)
ZebraNet Bridge Enterprise – Centrally manage Zebra printers from a single PC screen anywhere on your global network (option).
ZebraNet Utilities v 7.0 – Provides enhanced printing, conversion, and administration capabilities; message management and more (standard).
Zebra Universal Driver – The most powerful driver available from Zebra for Windows 95/98/2000/2003/ME/NT/XP (standard)
ZebraDesigner Driver – Zebra driver compliant with Windows 95/98/2000/2003/ME/NT/XP, and Vista (downloadable from www.Zebra.com)
ZBI 2.0 –Powerful programming language that lets printers run standalone applications, connect to peripherals, and much more (option)
ZBI-Developer – Programming utility makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer (standard with ZBI 2.0)

Networking Options

Ethernet - ZebraNet 10/100 Print Server- Offered in combination with USB & Serial interface (replaces Parallel port)

Wireless- 802.11 b/g with LCD display (replaces Parallel port)

Wireless- Bluetooth™ with LCD display (replaces Parallel port)

Firmware

EPL2®– Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications

EPL– Line Mode support (GX420d) enables format compatibility with legacy applications

ZPL II – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers.

Web View –Connect and control Zebra bar code printers via the printer's Web interface using a common Web browser (ZPL mode).

Alert – Printers equipped with ZebraNet print servers will notify you via any email-enabled, wired, or wireless device to minimize downtime (ZPL mode).

Printing Specifications

Resolution	203 dots/inch (dpi) (8 dots/mm)	300 dots/inch (dpi) (12 dots/mm)
Speed Inch/sec - ips (mm/sec)	Programmable 2, 3, 4, 5 with 6 max. (51, 76, 102, 127 with max.152)	Programmable 2, 3 with 4 max. (51, 76, with max.102)
Dot Pitch	0.0049" (0.13 mm)	0.0033" (0.08mm)
Max. print length	39.0" (991 mm)	39.0" (991 mm)
Min. print length	One dot	One dot
Max. print width	4.09" (104 mm)	4.09" (104 mm)
Min. print width	One dot	One dot
Bar code modulus "X" Dimension	5 mil to 50 mil	3.27 mil to 32.67 mil

Ribbon Specifications (thermal transfer units)

NOTE: For optimum print quality and printer performance, use of Zebra genuine ribbon is recommended as well as a notched ribbon core

- Ribbon Width: 1.33" (33.8 mm) to 4.3" (109 mm)
- Ribbon Capacity: 1 roll of ribbon per 1 roll of 5" OD media
- Core ID: 0.5" (12.7 mm)
- Ribbon OD: 1.36" (35 mm)
- Ribbon Length: 244' (74 m) using 0.000328" ribbon thickness
- Ribbon Type: wax, wax/resin and resin

Media Specifications

NOTE: For optimum print quality and printer performance, use of Zebra genuine supplies is recommended.

- Media Width: 0.75" (19 mm) - 4.25" (108 mm)
- Label Length:
  - Using tear off mode:

Minimum length	Model	Printing Mode
0.38" (9.7 mm)	GX420d	Direct thermal
0.38" (9.7 mm)	GX420t & GX430t	Thermal transfer
0.50" (12.7 mm)	GX420t & GX430t	Direct thermal

  - Minimum with label present sensor used - 0.50" (12.7 mm)
  - Minimum with cutter - 1.0" (25.4 mm)
- Maximum with standard memory - 39.00" (990 mm)
- Min Core Inner Diameter: 0.5" (12.7 mm)
- Max Roll Diameter: 5.00" (127 mm)
- Media Thickness: 0.003" (0.08 mm) - 0.0075" (0.19 mm)
- Media Sensing: fixed reflective and transmissive gap, black line, and notch
- Media Types: Roll-fed or fan-fold, die cut or continuous direct thermal labels with or without black mark, tag stock, continuous receipt paper, and wristbands

Calibration Procedure

- The GX420 and GX430 is equipped with a standard auto-calibration feature that can be set to initiate automatically during start-up of the printer - utilizing two to four labels to calibrate for efficient operation and less waste. The printer will also save the new settings in memory until the next calibration is performed.
- A manual calibration procedure can also be performed, if required. Consult your User's Guide for more details on the specific manual calibration steps.

ZPL Programming Language (ZPL/ZPL II)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics and bitmap fonts, label templates and formats
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Format inversion (white on black)
- Mirror-image printing
- Four position field rotation (0º, 90º, 180º, 270º)
- Slew command
- Programmable label quantities with print, pause
- Status messages to host upon request

ZPL Font Specifications

203 dpi (8 dots/mm)

Font	Matrix (in dots) (H x W)	Type*	Minimum Char. Size (H x W)	Maximum C.P.I.
A	9 x 5	U-L-D	.044" x .030"	33.3
B	11 x 7	U	.054" x .044"	22.7
C,D	18 x 10	U-L-D	.089" x .059"	16.9
E	28 x 15	OCR-B	.138" x .098"	10.2
F	26 x 13	U-L-D	.128" x .079"	12.7
G	60 x 40	U-L-D	.295" x .236"	4.2
H	21 x 13	OCR-A	.103" x .093"	10.8
GS	24 x 24	SYMBOL	.118" x .118"	8.5
P-V		U-L-D	Backward compatible w/ S-300	
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

300 dpi (12 dots/mm), GX430t

Font	Matrix (in dots) (H x W)	Type*	Minimum Char. Size (H x W)	Maximum C.P.I.
A	9 x 5	U-L-D	.030" x .020"	50.8
B	11 x 7	U	.037" x .030"	33.8
C,D	18 x 10	U-L-D	.060" x .040"	25.4
E	41 x 20	OCR-B	.138" x .085"	11.5
F	26 x 13	U-L-D	.085" x .053"	19.06
G	60 x 40	U-L-D	.200" x .160"	6.36
H	30 x 19	OCR-A	.100" x .098"	10.02
GS	24 x 24	SYMBOL	.80" x .80"	12.7
P-V		U-L-D		
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

**U = upper case, L = lower case, D = descenders*

- Character Fonts: Standard bitmapped Zebra fonts: A, B, C, D, E (OCR-B), F, G, H, (OCR-A), GS, P, Q, R, S, T, U, V & Ø Smooth font (CG Triumvirate™ Bold Condensed).
- Supports user defined fonts and graphics – including custom logos
- Bitmap fonts are expandable up to 10 times, height and width independent. Fonts E and H (OCR-B and OCR-A), however, are not considered in spec when expanded.
- Smooth scalable font Ø (CG Triumvirate™ Bold Condensed) is expandable dot-by-dot, height and width independent, while maintaining edges to a max. 1500 x 1500 dots.

ZPL Bar Code Symbologies

- **Bar Code Ratios**: 2:1 (non-rotated) and 3:1
- **Linear Bar Codes:** Code 11, Code 39, Code 93, Code 128, UPC-A, UPC-E, EAN-8, EAN-13, EAN-14, UPC-A and UPC-E with EAN 2 or 5 digit extensions, Plessey, POSTNET, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, LOGMARS, MSI, Codabar, and GS1 DataBar™ (formerly RSS)
- **2-Dimensional:** PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, Aztec

EPL Programming Language (EPL2)

- ASCII EPL2 programming language (Page Mode)
- EPL Line Mode
- Field Rotations
- Variable field support (up to 100)
- Counter support (up to 10)
- Variable field addition and subtraction
- Status reporting
- Form, fonts, and graphics storage
- Simple set of formatting commands
- Support of selected bar codes

EPL Font Specifications

203 dpi (8 dots/mm)

Font	Width (dot)	Height (dot)	CPI
1	8	12	20.3
2	10	16	16.9
3	12	20	4.5
4	14	24	12.7
5	32	48	5.6
8-Simp	32	32	6.3*
8-Trad	32	32	6.3*

* Spacing of Asian characters is controlled via the i command. The formula for CPI is 203 / (32 + i). Thus as i increases, CPI decreases. For example : If i = 2, CPI = 203/34 = 6.0

300 dpi (12 dots/mm)

Font	Width (dot)	Height (dot)	CPI
1	12	20	25.0
2	16	28	18.8
3	20	36	15.0
4	24	44	12.5
5	48	80	6.3

EPL Bar Codes

- **Linear Bar Codes:** Code 39, Code 128A, B & C(User selectable/Auto), UCC/EAN-128, Code 93, Codabar, Interleaved 2 of 5, UPC-A, UPC-E, UPC-A with 2 and 5 add on, UPC-E with 2 and 5 add on, EAN 13, EAN 8, EAN 13 with 2 and 5 add on, EAN 8 with 2 and 5 add on, Postnet (5, 9, 11, & 13 digit) Japanese Postnet, Plessey (MSI-1), MSI-3, German Post Code, and GS1 DataBar™ (formerly RSS)
- **2-Dimensional:** Maxicode (modes 2,3,4,6), PDF417, MacroPDF417, QR Code, Data Matrix, and Aztec

Communications Specifications

- RS-232 Serial interface, DB-9
- USB V1.1, bi-directional
- Internal 10/100 Ethernet – optional (replaces Parallel port)
- Bi-directional Parallel with DB-25 female connector
- **Wireless-** 802.11 b/g with LCD display – optional (this configuration eliminates Parallel port)
- **Wireless-** Bluetooth™ with LCD display – optional (this configuration eliminates Parallel port)

Electrical Specifications

- Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz, rated at 100 Watts

Agency approvals

- **Emissions**: FCC Part 15, Subpart B, VCCI, C-Tick
- **Emissions and Susceptibility**: (CE): EN55022 Class-B, EN61000-3-2, EN61000-3-3, and EN55024
- **Safety**: CB Scheme IEC 60950:1991 +A1 +A2 +A3 +A4, TUV NRTL, IRAM, NOM, AAMI, and CCC

Physical Specifications (*no options installed*)

	GX420d	GX420t/GX430t
Height	6.0" (152 mm)	7.5" (191 mm)
Width:	6.75" (171 mm)	7.6" (193 mm)
Depth:	8.25" (210mm)	10.0" (254 mm)
Weight:	3 lbs (1.4 kg)	4.6 lbs (2.1 kg)

Environmental Specifications

- Operating Temperature: 40º to 105ºF (4.4º to 41ºC)
- Storage Temperature: -40º to 140ºF (-40º to 60ºC)
- Operating Humidity: 10% to 90% non-condensing R.H.
- Storage Humidity: 5% to 95% non-condensing R.H.

Preventative Maintenance

- Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your *User's Guide* for further details.